DBYAKOV, V K

N/5
662.316
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Konveyery so stal'noy lentoy; osnovy proektirovaniya, rascheta i ekspluatatsii (Steel Belt Conveyers; Principles of Planning, Calculation and Operation, by) V. K. Dbyakov, R. L. Zelkov. Moskva, Mashgiz, 1952.

161 p. diagrs., tables.

D'YAKOV, V.G., kand. tekhn. nauk; SHREYDER, A.V., kand. tekhn. nauk; CHEREPAKHOVA, G.L., inzh.

Using aluminum alloys for petroleum heat-exchanging equipment. Khim. i neft. mashinostr. no.3:31-33 S '64. (MIRA 17:12)

84982

S/065/60/000/007/006/008/XX
E194/E484

15.6400

AUTHORS: Kaplan, S.Z., D'yakov, V.K. and Chuprik, N.I.

TITLE: The Influence of Lead and Copper Naphthenates on the Destruction of Polymers in Lubricants Thickened With Polymers

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No.7, pp.38-42

TEXT: Engine oils in service are in contact with metals and acquire a content of soluble metal salts, moreover they may come in contact with lead salts from gasoline. Previous investigations have shown that metal salts can accelerate oil oxidation and promote destruction of polymers used to thicken oil thus impairing the quality of the lubricant. Thus in the presence of naphthenate of trivalent iron at 150°C, destruction is observed of polymethacrylate, polyisobutylene and vinypol. It was accordingly of interest to study the influence of lead and copper naphthenate on the destruction of polymers in thickened oils and the present work was carried out with this object. Studies were made of the influence of naphthenates of copper and lead on the destruction of polymethacrylate, vinypol and polyisobutylene in turbine oil grade 22Л (22L) in atmospheres of oxygen, nitrogen and air at 150°C.

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E194/E484

The Influence of Lead and Copper Naphthenates on the Destruction of Polymers in Lubricants Thickened With Polymers

It was found that in oxygen and in air the lead compounds cause destruction of polymers but this does not occur in nitrogen. Of the polymers studied, polymethacrylate was most subject to destruction by lead naphthenates. Copper compounds have less influence on the destruction of polymers and in the case of vinypol they even somewhat retard reduction of oil viscosity. In accordance with previous observations if no metallic naphthenates are added at 150°C for three hours there is practically no destruction of polymethacrylate and polyisobutylene even in oxygen. However, under these conditions there is destruction of vinypol particularly in oxygen, to a lesser extent in air but not in nitrogen. The test procedure is described, molecular weights of the additives are given. All the tests were made with 5% solutions of polymers in turbine oil grade 22L. Curves of polymer destruction assessed by loss of viscosity are given in Figs.1, 2, 3 and further data on viscosity change in Table 2. In addition to the results already quoted, it is mentioned that addition of lead and copper compounds usually promotes the development of neutralization value. There are 3 figures, 2 tables and 6 references 4 Soviet, 2 English

D'YAKOV, V.P.

Electromechanical dosimeter. Suggested by V.P.D'iakov. Rats.i izobr.predl.v stroi. no.13:18 '59. (MIRA 13:6)

1. Glavnyy mekhanik stroitel'no-montazhnogo upravleniya No.1 tresta No.27 Mytishchistroy, stantsiya Mytishchi Moskovskoy oblasti, Vodoprovodnaya ul., d.13.
(Gravel)

D'YAKOV, V. V.

MAN'KO, P.A., kand. tekhn. nauk; ANDREYEV, I.L., inzh.; LUKOVKIN, A.I., inzh.;
D'YAKOV, V.V.

Machining marine boiler collecting drums on multispindle machine tools.
Sudostroenie 24 no.2:51-54 F '58. (MIRA 11:3)
(Boilers, Marine) (Machine tools)

BERKOVICH, Malka Tuv'yevna; BUKHMAN, Yakov Zakharovich; TAUBMAN, A.B., prof., doktor khim.nauk, retsenzent; GERVAS'YEV, A.M., kand. tekhn.nauk, retsenzent; D'YAKOV, V.V., gornyy inzh., retsenzent; BAKIROV, U.Kh., kand.tekhn.nauk, red.; TSYMBALIST, N.N., red. izd-va; TURKINA, Ye.D., tekhn.red.

[Industrial dust] Promyshlennaia pyl'. Sverdlovsk, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, Sverdlovskoe otd-nie, 1960. 240 p. (MIRA 13:8)

1. Institut fizicheskoy khimii AN SSSR (for Taubman). 2. Sverdlovskiy institut okhrany truda (for D'yakov). 3. Ural'skiy filial AN SSSR (for Bakirov).
(Dust)

D'YAKOV, V.V., starshiy nauchnyy sotrudnik

Dust formation in scraper operations. Sbor. rab. po silik. no.2: 47-60 '60. (MIRA 14:3)

1. Sverdlovskiy nauchno-issledovatel'skiy institut okhrany truda. (MINE DUSTS)

D'YAKOV, Vasiliy Vasil'yevich; KOCHNEV, K.V., otv. red.; GRISHAYENKO, M.I., red. izd-va; SHKLYAR, S.Ya., tekhn. red.

[Dust control in scraper levels] Obespylivanie gorizontov skreperovaniia. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 90 p. (MIRA 14:5)
(Mine dusts)

D'YAKOV, V. V., CAND TECH SCI, "Study ~~INVESTIGATION~~ OF VENTILATION AND sprinkling ~~SPRAYING~~ AS A MEANS OF ~~DUST~~ REMOVAL of dust FROM scraping levels ~~SCRAPED HORIZONS~~." SVERDLOVSK, 1961. (ACAD SCI USSR, URAL AFFILIATE). (KL, 3-61, 215).

D'YAKOV, V.V.; KOVALEV, V.I.

Efficiency in the use of mist sprayers. Prom. vent. no.9: 125-130 '60.

Selecting a spot for taking specimens in determining the intensity of dust formation during various industrial operations. 131-134 (MIRA 16:11)

YARTSEV, V.A., dotsent, kand.tekhn.nauk; PROKOP'YEV, L.N., gornyy inzh.
D'YAKOV, V.V., gornyy inzh.

Intensity of dust formation under various mining systems in some Ural iron-ore mines. Sbor. rab. po silik. no3:19-31 '61. (MIRA 15:10)

1. Sverdlovskiy gornyy institut.
(Ural Mountains—Iron mines and mining) (Mine dusts)

KOCHNEV, K.V., prof., doktor tekhn.nauk; D'YAKOV, V.V., gornyy inzh.; KOVALEV, V.I., gornyy inzh.

Effect of the speed and initial dust content of an air current on its picking up dust from the surface of mine workings. Sbor. rab. po silik. no.3:119-128 '61. (MIRA 15:10)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR i Sverdlovskiy institut okhrany truda.

(Mine dusts)

KOVALEV, V.I., gornyy inzh.; D'YAKOV, V.V., gornyy inzh.

Intensity of the dissemination of dust into the mine atmosphere during various mining operations in Ural iron-ore mines. Sbor. rab. po silik. no.3:191-198 '61. (MIRA 15:10)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR i Sverdlovskiy institut okhrany truda.
(Ural Mountains—Iron mines and mining) (Mine dusts)

L 18997-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JG/JD

ACCESSION NR: AT3002457 S/2935/62/000/000/0221/0228

60
57
21

AUTHOR: Synorov, V. F.; D'yakov, V. V.; Bobrova, L. I.

TITLE: Effect of chemical treatment on the surface characteristics of germanium and on the parameters of semiconductor devices [Conference on Surface Properties of Semiconductors, Institute of Electrochemistry, AN SSSR, Moscow, 5-6 June, 1961]

SOURCE: Poverkhnostny*ye svoystva poluprovodnikov. Moscow, Izd-vo AN SSSR, 1962, 221-228

TOPIC TAGS: chemical treatment, germanium, semiconductor, surface characteristics, semiconductor device

ABSTRACT: An experimental development is described of a stabilizing, protective, "passive" coating on Ge surface. The sulfidizing bath comprised: (a) low-melt chemically neutral salts; (b) active sulfides whose atoms have reduction properties; (c) a catalyst salt. n-Ge specimens of 2-ohms.cm resistivity were sulfidized for 20-30 min at 430-450C. The 2-4-micron coating was found resistant to HCl and HF, to vacuum heating and to 450C heating in N atmosphere; its moisture absorption was found to be very low. Measured by the photomagnetic method, rate of surface recombination of sulfidized Ge was 44-64 cm/sec. Alloying In through the sulfidized

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L 18997-63

ACCESSION NR: AT3002457

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surface at 550C resulted in a few batches of p-n-p Ge transistors whose characteristics were tested (curves presented). Authors' conclusions: (1) Principal possibility has been proved of obtaining a stable compound on the Ge surface by means of sulfidizing; (2) The resulting surface has better mechanical characteristics and is less liable to hydration than the untreated Ge surface; (3) Electrical characteristics of the surface are stable; (4) Ohmic contact is possible by fusing-in tin through the sulfide coating; (5) Possibility has been proved of obtaining p-n junctions by alloying In through the sulfide coating; (6) Parameters of test transistors have been stable to the effects of atmosphere and water vapor at room and higher temperatures. Orig. art. has: 7 figures and 2 tables.

ASSOCIATION: Tomskiy gosudarstvenny*y universitet im V. V. Kuyby*sheva (Tomsk State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: PH NO REF SOV: 000 OTHER: 007

Card 2/2

D'YAKOV, V.V., kand. tekhn. nauk; KORZON, A.I., gornyy inzh.; CHUDOV, Yu.A., gornyy inzh.

Efficient sprinkler system for mines. Gor. zhur. no.2:63-66 F '63. (MIRA 16:2)

1. Sverdlovskiy institut okhrany truda Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov.
(Mine dusts) (Sprinklers)

YARTSEV, V.A., dotsent; KUZNETSOV, I.P., dotsent; D'YAKOV, V.V., dotsent; KOVALEV, V.I., dotsent; SINITSIN, Ye.A., inzh.

Textbook on mine ventilation. Izv. vys. ucheb. zav.; gor. zhur. 6 no.4:194-197 '63. (MIRA 16:7)

(Mine ventilation)

D'YAKOV, Ye.A., mekhanik

Sectional ratchet wheel for looms. Tekst. prom. 23 no.10: 73-74 O '63. (MIRA 17:1)

1. Tkatskaya fabrika No.1 Chernovitskogo tekstil'nogo kombinata.

D'YAKOV, Yu., assistent

K.S. Sukhov's book. Zashch. rast. ot. vred. i bol. 10 no.1:61 '65.
(MIRA 18:3)

1. Kafedra nizshikh rasteniy Moskovskogo gosudarstvennogo universiteta.

MURAV'YEVA, M., kand. biolog. nauk; D'YAKOV, Yu., kand. biolog. nauk; KHARCHENKO, L.

Virus infection of potatoes. Zashch. rast. ot vred. i bol. 10 no.6:52-53 '65. (MIRA 18:7)

1. Dal'nevostochnaya stantsiya zashchity rasteniy, Ussuriysk (for Murav'yeva). 2. Nauchno-issledovatel'skiy institut kartofel'nogo khozyaystva (for D'yakov, Kharchenko).

D'YAKOV, Yu.T.

Adaptation of the pathogen of potato late blight to copper acetate. Izv. TSKHA no.2:39-46 '63. (MIRA 16:10)

SIVENKOVA, A.B., nauchnyy sotrudnik; D'YAKOV, Yu.T., nauchnyy sotrudnik

Systematic effect of the Bordeaux mixture substitutes. Zashch. rast. ot vred. i bol. 9 no.1:29 '64. (MIRA 17:4)

1. Institut kartofel'nogo khozyaystva, p/o Kraskovo.

ACC NR: AP6005102 (A) SOURCE CODE: UR/0324/65/000/004/0183/0188

AUTHOR: D'yakov, Yu. T.; Sivenkova, A. B.

ORG: none

29
B

TITLE: Chemical protection of potatoes from potato blight

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 4, 1965, 183-188

TOPIC TAGS: horticulture, plant disease control, fungicide

ABSTRACT: The effectiveness of fungicides, their application and residual effects on Phytophthora infestans are discussed. Neither copper nor preparation AB have been effective. TMTD is more toxic to Phytophthora infestans spores than Ziram, Captan or Bordeaux mixture; Phygon is still better. Application with a blower-type sprayer onto the lower leaves and the undersides of the leaves is necessary to obtain proper dispersion of the fungicide. Since Ph. infestans become acclimated to a fungicide in 1 season, alternate application in one

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ACC NR: AP6005102

season is recommended, with consideration for the following factors. Bordeaux mixture depresses plant growth when used early in the season. Ph. infestans develops resistance to organic fungicides more rapidly than to inorganic fungicides. Zineb and Ziram have certain therapeutic effects, and hence can be used effectively after infestation. Phygon and TMTD, although highly toxic to spores on the leaf surface, do not penetrate the plant and are readily washed off. Application of Zineb and then of Bordeaux mixture gives better results than their application in reverse order. Ph. infestans adapts more slowly to complex preparation, hence addition of copper oxychloride to Zineb or Ziram is suggested. Orig. art. has: 4 tables.

SUB CODE: 06/ SUBM DATE: 24Jul64/ ORIG REF: 007/ OTH REF: 009

Card 2/2 JV

D'YAKOV, Yu.V.

Effect of hydrologic conditions in spring on the beaver colony in the Khoper Preserve. Trudy Khop.gos.zap. no.3:64-78 '59. (MIRA 16:1)

(Khoper Preserve--Beavers)

D'YAKOV, Yu.V.

Effect of winter floods on beavers. Trudy Khop.gos.zap. no.3:79-91 '59. (MIRA 16:1)

(Khoper River Basin—Beavers)

D'YAKOV, Yu.V.

Materials on the characteristics of Khoper beavers. Trudy Khop.gos.zap. no.3:92-96 '59. (MIRA 16:1)
(Khoper Valley—Beavers)

D'YAKOV, Yu.V.

Materials on the biology of reproduction of the beaver population in the Khoper Preserve. Trudy Khop.gos.zap. no.5:119-129 '61. (MIRA 16:2)

(Khoper Preserve--Beavers)

D'YAKOV, Yu.V.

Short characteristics of natural conditions in the middle course of the Khoper River. Trudy Khop. gos. zap. no.4:5-30 '61. (MIRA 16:3)
(Khoper Valley—Natural history)

BARABASH-NIKIFOROV, I.I.; DEZHKIN, V.V.; D'YAKOV, Yu.V.

Beavers of the Don River basin; ecology and economic problems.
Trudy Khop.gos.zap. no.5:3-115 '61. (MIRA 16:2)
(Don Valley--Beavers)

D'YAKOV, YU.YE. (Moscow)

"Phase Detection in the Presence of Noise."

report presented at the All-Union Conference on Statistical Radio Physics, Gor'kiy, 13-18 October 1958. (Izv. vyssh uchev zaved-Radiotekh., vol. 2, No. 1, pp 121-127) COMPLETE card under SIFOROV, V. I.)

AUTHOR: D'yakov, Yu. Ye. SOV/109-4-6-4/27

TITLE: Transfer of Signal and Noise Through Non-linear Inertia Systems (Prokhozhdeniye signala i shuma cherez nelineynyye inertsionnyye sistemy)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 6, pp 936 - 941 (USSR)

ABSTRACT: The solution of various radio-engineering problems dealing with signals in the presence of noise can be obtained by integrating a non-linear differential equation which can be written as:

$$\hat{L}x - \hat{M}f(y - Dx) = 0 \qquad (1).$$

The quantity x in the equation is proportional to the unknown voltage at the output of the system, while y is the given input voltage; f(y - Dx) represents the current through an inertialess non-linear element, and is a non-linear function of the control voltage (y - Dx). The quantity D is a dimensionless constant dependent on the type of the non-linear device; the parameters $\hat{L}$ and $\hat{M}$

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SOV/109-4-6-4/27

Transfer of Signal and Noise Through Non-linear Inertia Systems

are linear differential operators and are independent of time. There is no general method of integrating Eq (1) and, though the equation covers a variety of problems, each problem should be solved separately. If y is a periodic function of time having a period T (as represented by the last equation on p 936), the output function is also T-periodic and is given by Eq (2). If the transmission system has a narrow bandwidth, Eq (2) can be approximately represented by Eq (3). This can also approximately be expressed by Eq (4). If the input signal is contained within a narrow bandwidth, it can be represented by Eq (5), where η and $\varphi \ll 1$. The problem now consists of finding the quantities b, ψ_o, ψ and ξ (in Eq 4) if the quantities a, η and φ of Eq (5) are given. By substituting Eqs (4) and (5) into Eq (1) and averaging it over the period T, the expression to be solved is given by Eq (6). This can be split into two independent equations which are in the form of Eqs (7). The zero approximation of the solution of Eq (7) is given by Eqs (8) and the first approximation is determined by Eqs (9), where the constants

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F_i and the operators $\hat{L}$ and $\hat{M}$ are functions of a, b and ψ_o. From Eqs (9) it is possible to obtain separate expressions for the amplitude and phase fluctuations at the output; these are represented by Eqs (10). In the case of a diode detector (Figure 3), the basic formula is given by:

$$\dot{x} + \frac{1}{RC}x = \frac{1}{C} f(y - x) \qquad (14).$$

This is derived directly from Eq (1). If the output voltage of the diode load is represented by Eq (15), Eq (6) can be expressed as Eq (16). The right-hand side of the equation can be expanded into a series and is represented by Eq (17). The equation to be solved is, therefore, given by Eq (18). The constant k can be determined if the diode characteristic is known. It is assumed that the characteristic is linear and represented by the first two equations on p 940. The constants k_o,

k_1, k_2 and k_3 are, therefore, given by Eqs (19). Eq (18) can now be written as Eq (22), where B is given by Eq (23). From this, it follows that the detector acts as a linear low-frequency filter with respect to the amplitude functions of the input signal; the transfer function of this detector is given by Eq (24). The spectrum of the voltage fluctuation at the detector load is given by Eq (25). The author makes acknowledgment to Professor S.M. Rytov for a number of suggestions and to Candidate of Technical Sciences V.N. Tipugin for his interest in this work. There are 4 figures and 2 Soviet references.

SUBMITTED: April 24, 1958

66707

6.9000

SOV/109-4-8-28/35

AUTHOR: D'yakov, Yu.Ye.

TITLE: Conversion of Noise in Some Radio-receiving Devices Having an Inertia-type Non-linearity

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1393 - 1394 (USSR)

ABSTRACT: In an earlier work (Ref 1), the author gave a method of analysis of the fluctuations in narrow-band systems having an inertia-type non-linearity. The equations for the fluctuations are in the form:

$$\dot{\xi} + A\xi = B\eta$$

where A and B are constants. The following notation is adopted: the relative amplitudes and phases at the input of a system are designated η and φ, while at the output they are ξ and ψ. The transfer coefficient is defined by the second equation on p 1392. The input signal is assumed to be in the form of the last equation on p 1393. The formulae are used to derive the equations

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66707

SOV/109-4-8-28/35

Conversion of Noise in Some Radio-receiving Devices Having an Inertia-type Non-linearity

for the output noise for the following systems:
1) an amplitude limiter in which the frequency is multiplied N times (Figure 1);
2) a frequency multiplier which does not operate in the saturation regime;
3) a frequency changer (Figure 2).

The author makes acknowledgment to Professor S.M.Rytov for his interest in this work.

There are 2 figures and 1 Soviet reference.

SUBMITTED: March 27, 1959

Card 2/2

69930

S/109/60/005/05/019/021
E140/E435

9.3260

AUTHOR: D'yakov, Yu.Ye.

TITLE: Forced Oscillations of a Resonant Circuit with Randomly Varying Capacitance

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5, pp 863-865 (USSR)

ABSTRACT: The oscillations of an RLC-circuit with the inverse capacitance modulated by white noise are considered. The gain, noise factor of a parametric amplifier with noise pumping are calculated. There are 3 references, 2 of which are English and 1 Soviet.

SUBMITTED: February 2, 1960

Card 1/1

S/109/60/005/07/023/024
E140/E163

9.4300

AUTHOR: D'yakov, Yu. Ye.

TITLE: ~~On the Theory of~~ Single-Circuit Parametric Amplifiers 25

PERIODICAL: Radiotekhnika i elektronika, Vol 5, No 7, 1960, pp 1189-1191 (USSR)

ABSTRACT: The noise figure of an amplifier consisting of a linear RLC-circuit with periodically varying parameters is calculated on the basis of the general theory of Hill's equation without special assumptions as to the form of parameter modulation or its depth. It is assumed that a fairly narrow-band filter follows the circuit, passing only the signal frequency, in which case the amplification of the circuit-filter system is independent of signal phase.
Acknowledgements are expressed to S.M. Rytov for his interest.
There are 2 Soviet references.

SUBMITTED: July 11, 1959

Card 1/1

DYAKOV, Yu. Ye., MARKOV, A. A., SAKALYAN, K., and SHEBESHTEN, B.

"Impulse Scaling Circuit Using New System with Multiple Equilibrium States"

Joint Institute of Nuclear Reseach, Dubna, USSR.

report submitted for the IAEA conf. on Nuclear Electronics, Belgrade, Yugoslavia 15-20 May 1961

9.2572 25951 S/141/61/004/001/011/022
E033/E435

AUTHORS: Gershenzon, Ye.M., D'yakov, Yu.Ye., Soina, N.V., Smirnova, L.A. and Etkin, V.S.

TITLE: Widening the passband of parametric amplifiers with the help of coupled circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol.4, No.1, pp.121-125

TEXT: The relatively narrow frequency passband of tuned parametric amplifiers is not a fundamental deficiency and can be overcome by the use of coupled tuned circuits. This article investigates the possibility of widening the passband by two coupled circuits. The amplifier is represented as two identical coupled circuits tuned to the same frequency ω_0, but the capacity of one circuit is varied at a frequency $\omega_H = 2\omega_0$. The differential equations for such a driven oscillatory circuit may be written as

$$\frac{d^2q_1}{dt^2} + 2h\frac{dq_1}{dt} q_1\omega_0^2 [1 + m\cos\omega_H t] + \eta\frac{d^2q_2}{dt^2} = e^{j\omega t} + e^{-j\omega t};$$

$$\frac{d^2q_2}{dt^2} + 2h\frac{dq_2}{dt} + q_2\omega_0^2 + \eta\frac{d^2q_1}{dt^2} = 0, \tag{2}$$

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where $\eta = M/L$ - the coupling coefficient; $2h = R/L$; $\omega_0^2 = 1/LC_0$; L, R being the self-inductance and resistance of each circuit, M the mutual inductance, C_0 the constant capacity of the tuned circuit. The variable capacity C_1 is related to C_0 by $C_1^{-1} = C_0^{-1}(1 + m \cos \omega_H t)$. The solution depends on the degree of coupling. It is shown that: 1) if the coupling is less than, or equal to, critical ($\varkappa = \eta Q \leqslant 1$) then the amplifier is excited only at the frequency $\omega_H/2$ and the critical modulation depth increases $(1 + \varkappa^2)$ times in comparison with a single tuned circuit; 2) if the coupling is greater than critical ($\varkappa = \eta Q > 1$) then the amplifier is excited at three frequencies: $\omega_1 = \omega_H/2$, ω_2 and ω_3, which correspond to detuning $\alpha_1'' = \pm\sqrt{\varkappa^2 - 1}/Q$ (ω_2 and ω_3 are approximately the same as for the frequencies of the normal oscillatory system). As far as the passband widening is concerned only the first case, when $\varkappa \leqslant 1$, is of interest (since with coupling greater than critical, the frequency response curve is double humped with a deep drop in the middle). The gain k and the passband $\Delta f/f$ are found next.

$$k = \frac{Q^2}{Q_{ext}^2 n^2} \frac{1}{(1 + \varkappa^2)^2} \tag{8}$$

where $Q_{ext} = 1/Z\omega_o C_o$; $n = 1 - m^2/m_{cr}^2$

Z is the wave impedance of the supply line to the amplifier; m_{cr} is the critical modulation. For $n \ll 1$, the passband equals

$$\frac{\Delta f}{f} \simeq \frac{n}{Q} \frac{1 + \varkappa^2}{1 - \varkappa^2} \tag{9}$$

and hence

$$\frac{\Delta f}{f} \sqrt{k} = \frac{1}{Q_{ext}} \frac{1}{1 - \varkappa^2} \tag{10}$$

If $\varkappa < 1$, reduction in the gain is accompanied by increase in the passband and the product $(\Delta f/f)\sqrt{k}$ can be significantly greater than for a single circuit. The phase change introduced into the signal is given by

$$\operatorname{tg}\varphi \approx -\frac{\alpha_1 Q}{n}\,\frac{1-\varkappa^2}{1+\varkappa^2} \qquad (12)$$

where $\alpha_1 = 1 - (\omega^2/\omega_0^2)$. The frequency response curves are illustrated. The theoretical results were confirmed on an experimental model at 4.5 Mc/s frequency. For the single-circuit amplifier, the passband was 50 kc/s and the gain 20 dB; for the coupled circuit case, the passband was 150 Mc/s. Thus $(\Delta f/f)\sqrt{k}$ was increased from 1/9 to 1/3. The use of coupled circuits leads to a similar widening at uhf, e.g. for a single circuit amplifier with $k = 20$ dB, bandwidth $\approx$ 15 Mc/s; for a double circuit amplifier with $k \approx 20$ dB, the bandwidth is 45 to 50 Mc/s. There are 3 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications read as follows: H.Heffner, G.Wade, J.Appl.Phys., 29, 1262 (1958); H.Heffner, K.Kotzebue, Proc.IRE, 46, 1301 (1958); G.F.Herrmann, M.Uenohara, A.Uhlir, Proc.IRE, 46, 1301 (1958).

Widening the passband ... 25951 S/141/61/004/001/011/022
E033/E435

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V.I.Lenina (Moscow Pedagogical Institute imeni V.I.Lenin)

SUBMITTED: July 7, 1960

Card 5/5

9.2572

25960

S/141/61/004/001/020/022
E192/E382

AUTHOR: D'yakov, Yu. Ye.

TITLE: Noise Figure of a Double-tuned System Subjected to Parametric Excitation of One of the Circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol. 4, No. 1, pp. 182 - 184

TEXT: The system considered is illustrated in Fig. 1. This circuit differs from the usual double-tuned parametric amplifier by virtue of having the two resonant frequencies near to each other and by the fact that the parametric excitation is applied to the reactive element of one of the circuits and not to the coupling element. The present work can be regarded as an appendix to the preceding article (Ref. 1 - p. 121 of this issue), where the dynamic characteristics of the system were considered. The following notation is adopted:

$$m_n = M/L_n; \quad Q_n = \omega_n L_n/R_n; \quad \omega_n = 1/\sqrt{L_n C_n}; \quad h_n = R_n/2L_n \quad (n = 1,2).$$

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where M is the mutual inductance. The charges $q_{1,2}$ and the capacitances $C_{1,2}$ obey the following equations:

$$\frac{\ddot{q}_1}{\omega_1^2} + \frac{m_1}{\omega_1^2}\ddot{q}_2 + \frac{\dot{q}_1}{Q_1\omega_1} + [1 + \eta_1 \cos(pt)]\, q_1 = \frac{\dot{U}_1}{L_1\omega_1^2}; \tag{1}$$

$$\frac{\ddot{q}_2}{\omega_2^2} + \frac{m_2}{\omega_2^2}\ddot{q}_1 + \frac{\dot{q}_2}{Q_2\omega_2} + q_2 = \frac{\dot{U}_2}{L_2\omega_2^2}.$$

For the case of $U_1 = \exp(j\omega t)$ and $U_2 = 0$, it can be assumed that the solutions of these equations are approximately given by:

$$q_1 \simeq e^{j\omega t}(k_{11} + k_{12}e^{-jpt});$$
$$q_2 \simeq e^{j\omega t}(k_{21} + k_{22}e^{-jpt}). \tag{3}$$

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Analogously for $U_1 = 0$ and $U_2 = \exp(j\omega t)$, the solutions are:

$$q_1 \simeq e^{j\omega t}(k'_{11} + k'_{12} e^{-jpt}); \qquad q_2 \sim e^{j\omega t}(k'_{21} + k'_{22} e^{-jpt}). \tag{4}$$

For further analysis, it is assumed that the output signal q_1 is obtained at the output of a narrow-band filter, which is tuned to the frequency $\omega_c \simeq \omega_{1,2}$, the filter being such that it suppresses the mirror frequency $p - \omega_c$. Further, the filter is decoupled with respect to the system, its response is rectangular in shape and its bandwidth is B. Under this assumption, the coefficients k_{mn} and k'_{mn} in Eqs. (3) and (4) can be regarded as being independent of ω. In order to determine the noise figure, the amplification of the external noise is considered in the absence of internal

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noise and the mean square value of noise at the output of the filter is σ_o^2 ; in the presence of internal noise, the overall output noise is σ^2 . The noise figure is defined as $F = \sigma^2/\sigma_o^2$. The spectra of the external noise and the noises of the first and second tuned circuits are denoted as $(\zeta^2)_\omega$, $(\zeta_1^2)_\omega$ and $(\zeta_2^2)_\omega$; these can be expressed by corresponding temperatures and noise resistances: TR; $T_1R_{1\omega}$ and $T_2R_{2\omega}$. The noise figure can therefore be expressed as:

$$F = 1 + \frac{|k_{11}|^2 + |k_{12}|^2}{|k_{11}|^2}\frac{T_1R_{1\omega}}{TR} + \frac{|k'_{11}|^2 + |k'_{12}|^2}{|k_{11}|^2}\frac{T_2R_{2\omega}}{TR}. \quad (5)$$

Noise Figure 25960 S/141/61/004/001/020/022
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The constants k_{mn} and k'_{mn} in Eq. (5) can be found by solving Eqs. (1). The final expression for the noise figure is:

$$F = 1 + 2\left(\frac{T_1 R_{1\omega}}{TR} + \frac{m_1^2 Q_2^2}{1 + \nabla^2} \frac{T_2 R_{2\omega}}{TR} \right) \tag{12}$$

where Δ is the detuning defined by:

$$\nabla = \frac{p/2 - \omega_c}{h_2} ;$$

it is also assumed in this expression that $\left| k_{12}/k_{11} \right|^2$ is approximately equal to unity (Ref. 1).

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Noise Figure 25960 S/141/61/004/001/020/022
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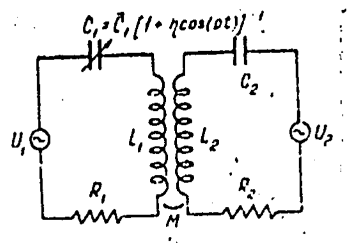
There are 1 figure and 2 Soviet references.

SUBMITTED: June 24, 1960

Fig. 1:



Card 6/6

9,2572

22275 S/109/61/006/005/022/027
D201/D303

AUTHOR: D'yakov, Yu.Ye.

TITLE: The transfer function of the super regenerative parametric amplifier

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 5, 1961, 838 - 840

TEXT: The author determines analytically the transfer function of a single circuit parametric amplifier. The determination reduces to the solution of the differential equation

$$\ddot{q} + 2h\dot{q} + \omega_0^2 (1 - \eta(t) \cos [\Omega t + \psi + \lambda(t)]) q = \exp j\omega t, \qquad (1)$$

where $\eta(t)$ and $\lambda(t)$ - slow varying functions of time ($\dot{\eta} \ll \omega_0 \eta$, $\lambda \ll \omega_0$). [Abstractor's note: No further symbols are explained]. It is further assumed that $\lambda = \psi = 0$, $\Omega = 2\omega_0$, $Q = \omega_0/2h \gg 1$ and that

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$$\delta = \omega - \omega_0 \ll \omega_0,\ z = 1 + \frac{j\delta}{h},\ \alpha = \dot{\eta}/2\eta h,\ h_{1,2} = h\left(1 \mp \frac{\bar{\eta}Q}{2}\right),$$

$$\mu = \frac{hQ}{2}\int \tilde{\eta}\, dt,\ f_1 = (z - 2\alpha)/4jQ,\ f_2 = \eta : 8,$$

$$p_1 = 2h(z - \alpha),\ p_2 = h^2\left(z^2 - \frac{\eta^2 Q^2}{4} - 2z\alpha\right),\ p = h^2\left(\frac{\eta^2 Q^2}{4} + \alpha^2 - \frac{\dot{\alpha}}{h}\right),$$

where $\tilde{\eta}$ and $\bar{\eta}$ are the varying and constant terms respectively of function $\eta(t)$. The solution of Eq. (1) for $\omega > o$ is sought in the form of

$$q = e^{j\omega t}\,(k_1 + k_2 e^{-j2\omega_0 t}), \tag{2}$$

assuming that $\dot{k}_{1,2}$ are slow varying functions of time so that $\dot{k}_{1,2} \ll \omega_0\, k_{1,2}$. The factor multiplying expression $j\omega t$ in Eq. (2) is called the transfer function. Substituting (2) into (1) and equating to zero the coefficients of expression $j\omega t$ and of exp.

$j(\omega - 2\omega_0)t$, one obtains

$$\frac{\ddot{k}_1}{\omega_0^2} + \left(\frac{1}{Q\omega_0} + \frac{2j\omega}{\omega_0^2}\right)\dot{k}_1 + \left[1 - \left(\frac{\omega}{\omega_0}\right)^2 + \frac{j\omega}{Q\omega_0}\right]k_1 - \frac{1}{2}\eta k_2 = \omega_0^{-2},$$

$$\frac{\ddot{k}_2}{\omega_0^2} + \left(\frac{1}{Q\omega_0} + \frac{2j(\omega - 2\omega_0)}{\omega_0^2}\right)\dot{k}_2 + \left[1 - \left(\frac{\omega - 2\omega_0}{\omega_0}\right)^2 + \frac{j(\omega - 2\omega_0)}{Q\omega_0}\right]k_2 - \frac{1}{2}\eta k_1 = 0.$$

Since $k_{1,2}$ are slow varying and Q is very large, the first two terms of each equation in the above system can be neglected and separate equations for k_1 and k_2 are then easily found as

$$\ddot{k}_n + p_1(t)\,\dot{k}_n + p_2(t)\,k_n = f_n,\ n = 1,2. \qquad (3)$$

It follows from (3) that the assymptotic values k_n are equal to

$$k_n(t) = \int_{-\infty}^{t} \frac{y_2(t)\,y_1(\theta) - y_2(\theta)\,y_1(t)}{\Delta(\theta)} f_n(\theta)d\theta, \qquad (4)$$

where $y_{1,2}$ - linear-independent solutions of Eq. (3) without the RHS and $\Delta = y_1\dot{y}_2 - \dot{y}_1y_2$. After substitution $y = w \exp(-\frac{1}{2}\int p_1 dt)$, $\ddot{y} + p_1\dot{y} + p_2y = 0$ becomes $\ddot{w} - \rho(t)w = 0$, where $\rho(t) = p_2 - (p_1^2 + 2\dot{p}_1)/4$. It is shown by S.M. Rytov (Ref. 1: Modulirovannyye kolebaniya i volny (Modulated Oscillations and Waves) Tr. FIAN SSSR, 2, 1) that if the function $\rho(t)$ varies slowly enough, i.e. when

$$\frac{1}{\rho}\frac{d\sqrt{\rho}}{dt} \sim a, \quad \frac{1}{\rho^{3/2}}\frac{d^2\sqrt{\rho}}{dt^2} \sim a^2, \quad a \ll 1, \tag{5}$$

the linear-independent solutions of $\ddot{w} - \rho(t)\, w = 0$ are equal to $w_{1,2} = g^{-1/2}\exp.(\pm\int g dt)$, where $g = \sqrt{\rho} + 0(a^2)$. In the case of a super regenerative parametric amplifier the conditions of Eq. (5) are usually fulfilled and also

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$$4(\alpha^2 - \dot{\alpha}h^{-1})\,\eta^{-2}\,Q^{-2} \sim a^2 \ll 1 \qquad (6)$$

holds so that in approximating the expressions for $w_{1,2}$ one should take $g = \sqrt{\rho} \simeq hQ\eta/2$. As a result

$$y_{1,2} = \exp[-\,h(z \mp \frac{Q\bar{\eta}}{2})\,t \pm \mu(t)] = \exp[-(h_{1,2} + j\delta)\,t \pm \mu(t)] \qquad (7)$$

is obtained, from which it follows that $\Delta(t) = -\,hQ\eta\,\exp(-\,2hzt)$ the function $\mu(t)$ in (7) has no constant component; Thus the parametric system described by Eq. (1) is characterized by two coefficients of attenuation h_1 and h_2. Expressions (2), (4) and (7) determine the dependence of the sought transfer function on the coefficients of Eq. (1). The following examples are considered: 1) The quantity η in Eq. (1) is independent of time (the parametric amplifier in normal regenerative regime). In this case $\eta = \bar{\eta}$, $\mu = 0$, $f_1 = z/4jQ$ and $f_2 = \bar{\eta}/8$. From Eq. (4) one obtains

$$\left.\begin{matrix} k_1 = x/4jQ \\ k_2 = \bar{\eta}/8 \end{matrix}\right\} \times \frac{2}{\bar{\eta}\omega_0}\left[\frac{1}{h_1 + j\delta} - \frac{1}{h_2 + j\delta}\right]. \tag{8}$$

2) The quantity η is constant and equal to zero (constant parameters circuit). Taking $\eta = \bar{\eta} \longrightarrow 0$, one obtains, as expected

$$k_1[2j\omega_0(h + j\delta)]^{-1}, \quad k_2 = 0.$$

3) Assume that $\eta(t) = \bar{\eta}(1 + \varkappa \cos vt)$, $\varkappa < 1$. In this case

$$\tilde{\eta} = \bar{\eta}\varkappa \cos vt, \quad \alpha = -\frac{\varkappa v \sin vt}{2h(1 + \varkappa \cos vt)}, \quad \mu = \beta \sin vt, \quad \beta = \frac{\bar{\eta}Q}{2}\frac{h\varkappa}{v}. \tag{9}$$

It follows from (9) that the role of the small parameter a in Eq. (5) is taken by the ratio v/h. Substituting Eq. (9) into (7) and (4) one obtains

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$$y_{1,2} = \exp\left[-(h_{1,2} + j\delta)t \pm \beta \sin \nu t\right], \quad \Delta = -hQ\bar{\eta}(1 + \varkappa \cos \nu t)\exp(-2h\varkappa t),$$

$$k_1 = \frac{-z}{4jhQ^2\bar{\eta}} \int_{-\infty}^{t} \{\exp\left[(h_1 + j\delta)(\theta - t) + \beta(\sin \nu\theta - \sin \nu t)\right] - \\ - \exp\left[(h_1 + j\delta)(\theta - t) - \beta(\sin \nu\theta - \sin \nu t)\right]\}(1 + \varkappa \cos \nu\theta)^{-1} d\theta. \tag{10}$$

Since

$$\exp(-\beta \sin \nu\theta) = \sum_{n=-\infty}^{\infty} J_n(j\beta) e^{jn\nu\theta},$$

therefore, assuming $(1 + \varkappa \cos \nu\theta)^{-1} \simeq 1 - \varkappa \cos \nu\theta$, and using the relationship $J_{n+1}(j\beta) + J_{n-1}(j\beta) = (2n/j\beta)\, J_n(j\beta)$ from Eq. (10)

$$k_1 = \frac{z}{4jhQ^2\bar{\eta}} \left\{ e^{\beta \sin \nu t} \sum_n \frac{e^{jn\nu t}}{h_1 + j(\delta + \nu n)} \left(1 + \frac{j\varkappa n}{\beta}\right) J_n(j\beta) - \\ - e^{-\beta \sin \nu t} \sum_n \frac{e^{-jn\nu t}}{h_2 + j(\delta - \nu n)} J_n(j\beta) \left(1 - \frac{j\varkappa n}{\beta}\right) \right\}. \tag{11}$$

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is obtained; for $\bar{\eta} = \frac{2}{Q}$ one obtains

$$k_1 \simeq \frac{s}{4j\omega_0} e^{\beta \sin \nu t} \sum_n \frac{\left(1 + \frac{jn\nu}{h}\right) J_n(j\beta)}{h_1 + j(\delta + n\nu)} e^{jn\nu t},$$

and for k_2 a similar expression

$$k_2 \simeq \frac{1}{4\omega_0} e^{\beta \sin \nu t} \sum_n \frac{J_n(j\beta)}{h_1 + j(\delta + n\nu)} e^{jn\nu t}.$$

There are 2 Soviet-bloc references.

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22276 S/109/61/006/005/023/027
D201/D303

AUTHOR: D'yakov, Yu.Ye.

TITLE: One error allowed in the analysis of a double circuit parametric amplifier

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 5, 1961, 841

TEXT: In the analysis of a double circuit regenerative parametric amplifier, it is usually assumed that oscillations in one of the circuits have the signal frequency $\omega - \Omega_1$, and in the other, the so-called balancing circuit they have the difference frequency $/\omega - \Omega_3/ \simeq \Omega_2$, where Ω_3 the pump frequency, $\Omega_{1,2}$ - the proper frequencies of the two circuits. This assumption is valid for high Q-factors and a small coupling between the two circuits. In the degenerate case $\Omega_1 = \Omega_2$ two frequencies will exist in each circuit, ω and $\omega - \Omega_3$, similarly as in a single circuit parametric ampli-

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One error allowed in ... S/109/61/006/005/023/027
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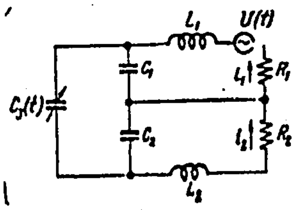
fier. The effect of the two frequencies present in the circuits has not been taken into account either by S. Bloom and K.K.N. Chang (Ref. 1: Theory of parametric amplification using non linear reactances, RCA Rev., 1957, 18, 4, 578) or by V.I. Zubkov and Ya. A. Monosov (Ref. 2: Nekotorye voprosy teorii parametricheskikh usiliteley Radiotekhnika i elektronika, 1960, 5, 1, 75). The analogy between degenerate double circuit and single circuit parametric amplifiers can be easily proved mathematically considering the circuit as shown in Fig. 1. Assume the two circuits shown to

Fig.



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be identical and let $C_n = C$, $(L_n C_n)^{-1/2} = \Omega_o$, $R_n/2L_n = h$ and $v_n = C^{-1} \int i_n \, dt (n = 1,2)$. From Kirchhoff's equations for v_n the following system of differential equations is obtained

$$\ddot{v}_n + 2h\dot{v}_n + \Omega_o^2 v_n - \Omega_o^2 F(t)(v_1 + v_2) = \begin{cases} \Omega_o^2 \, U(t), & n = 1 \\ 0, & n = 2 \end{cases} \qquad (1)$$

where

$$F(t) = C_3(t)C^{-1} \, [1 + C_3(t)C^{-1}].$$

Combining Eqs. (1) with n = 1 and n = 2 and putting $v = v_1 + v_2$ -

$$\ddot{v} + 2h\,\dot{v} + \Omega_o^2[1 - 2F(t)] \, v = \Omega_o^2 \, U(t) \qquad (2)$$

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is obtained. This expression is exactly the same as that describing a single circuit parametric amplifier, the capacitance of which is modulated proportionally to $[1 - 2F(t)]^{-1}$ which proves the analogy between the two amplifiers, this proof being the aim of the present article. If the function v_1 satisfying Eq. (2), is found, then as seen from Eq. (1), the determination of v_1 and v_2 reduces to the elementary problem of solving a differential equation of the second order with constant coefficient and given RHS. In the particular case, when the amplitude of the alternating component of the coupling capacitance C_3 is near to its threshold value of parametric regeneration, $v_1 \simeq v_2$ and $i_1 \simeq i_2$. There are 1 figure and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: S. Bloom, K.K.N. Chang, Theory of parametric amplification using non-linear reactances, RCA Rev., 1957, 18, 4, 578. [Abstractor's note: This is essentially a full translation].

SUBMITTED: April 21, 1960

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9.2572 (1113, 1532)

AUTHORS: Akhmanov, S. A., D'yakov, Yu. Ye.

TITLE: On the stability of the frequency of a two-circuit parametric oscillator

PERIODICAL: Elektrosvyaz', no. 2, 1962, 26 - 31

TEXT: The possibility of using the two-circuit parametric oscillator for frequency stabilization is discussed. The authors begin by examining theoretically the self-excitation conditions for the two-circuit parametric oscillator; they derive a set of formulae giving the conditions under which parametric oscillations arise. They proceed next to an estimate (in linear approximation) of the factors determining the stability of the generated frequencies. They show that, under certain conditions, the influence of the drifts of the circuit parameters upon the generated frequencies is compensated, so that the stability of the frequency of the two-circuit oscillator can be considerably higher than the stability of the partial frequencies of the oscillating circuits. It is convenient to use the capacitance of the p-n junction as the nonlinear reactive element. An important advantage of the examined oscillator is also the possibility to do with-

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out electron tubes, which permits avoidance of such fluctuation sources as the flicker and the Schottky effects. The theoretical calculations and the formulae obtained by the authors were checked experimentally on super-high-frequency parametric oscillators. The capacitances of germanium semiconductor diodes with p-n junction were used as modulated capacitances. For comparatively low pumping powers (10 - 15 milliwatts on super-high-frequency and with a voltage of $\sim$2 volts in the longwave range), it proved possible to obtain stable parametric oscillations; the loaded Q-factors (Q_1 and Q_2) of the circuits were $\sim$50 - 70. The theoretical formulae were found to be in good agreement with the experimental results. At the end of the article, the authors express their thanks to professor S. D. Gvozdover, and also to A. K. Romanyuk and M. M. Strukov. There are 4 figures and 2 non-Soviet-bloc references. The references to the English-language publications read as follows: Heffner, Wade, Gain, bandwidth and noise characteristics of the variable parameter amplifier. J. Appl. Phys., 1958, v. 29, no. 9. Uhlir. The potential of semiconductor diodes in high-frequency communications. Proc. IRE, 1958, v. 46, no. 6.

SUBMITTED: May 28, 1960

Card 2/2

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L 9943-65 EWT(d)/EEC(k)-2/EEC-4 Pc-4/Pq-4/Pg-4/Pk-4/Pi-4 ESD(t)/RAEM(t)

AP4045492

Ye., Senn, V. Ya.

Average value and dispersion of the number of crossings ... specified ... random process

SOURCE: Radiotekhnika i elektronika, v. 9, no. 9, 1964

Dispersion:

are explained in D. Middleton's "Introduction ...

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ACCESSION NR: AP4045492

Theory of Communication," and S. O. Rice's paper in the Bell System Techn. J., 1948, 28, 1, whose fundamental formulas are used by the authors of this article. Curves for δ and σ plotted on the basis of theoretical and experimental data are presented. "The authors wish to thank S. M. Rytov a... V. ... Tikhonov ... attention to the work and discussions of the ... formulas.

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[Tractors] Traktory. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1956.307 p.
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DORRENDORF, V.I.; D'YAKOVA, B.B.; VLADYCHINA, Ye.N.

Spraying of nitrocellulose and perchlorovinyl lacquer and paint materials in the electric field. Lakokras.mat.i ikh prim. no.3: 56-60 '62. (MIRA 15:7)

(Spray painting, Electrostatic)

M-5

USSR / Cultivated Plants. Fodder Crops.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58648

Author : D'yakova, E. V.; Borodulina, Yu. S.
Inst : All-Union Scient.-Res. Institute of Fodders
Title : The Effect of Liming on the Increase of Activity of Root Tubercle Bacteria of Red Clover and Alfalfa

Orig Pub : Byul. nauchno-tekhn. inform. Vses. n.-i. in-t kormov, 1957, No 2-3, 42-47

Abstract : Studies, conducted in 1953 - 1955 on turf-podzolic argillaceous soil (pH 4.4), showed that the introduction of lime and other fertilizers greatly increases the nitrogen fixing capacity of root tubercle bacteria in clover and alfalfa. In vegetation experiments (in sandy crops) where root tubercle bacteria, isolated from soils, fertilized by $P_{50}K_{50}$ + 5 cwt/ha lime, or K_{50} + organo-mineral mixture (with 5 cwt/ha lime) 3 t/ha, or

Card 1/2

D'YAKOVA, G. A., and GORLENKO, M. V., Moscow Station for Plant Protection,
All-Union Insitute of plant Protection (VIZR)

Bacterial Diseases of Fruit Trees in the USSR. (a synopsis).

SO: Mikribiologia, Vol 20, No 6, Nov/Dec 51.

1. DYAKOVA, G. A.

2. USSR (600)

4. Phytoncides

7. Phytoncides and plant diseases. Usp. sovr. biol. 35, No. 2, 1953. - pp 257-270

This is the fourth article of a series dealing with interrelationships between phytopathogenic bacteria, the environment, and host plants. It gives detailed account of USSR work on the connection between phytoncides and the immunity of plants to definite diseases, the action of phytoncides of higher plants on phytopathogenic bacteria, the action of bacteria on phytopathogenic fungi, the effects produced by root phytoncides, and the practical utilization of phytoncides in combatting plant diseases and preserving foodstuffs. A bibliography of 54 refs (all Russian) is appended.

255T4

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

D'YAKOVA, G. A.

D'YAKOVA, G. A. -- "Bacterial Burn on Pears in the USSR and the Biology of Its Causative Agent." Leningrad Order of Lenin State U imeni A. A. Zhdanov. Soil Biology Faculty. Leningrad, 1955. (Dissertation for the Degree of Candidate in Biological Sciences)

SOURCE Knizhnaya Letopis', No 6 1956

D'YAKOVA, G.A.

Causative agent of the fire blight of pears in the U.S.S.R. and its biological properties. Nauch. dokl. vys. shkoly; biol. nauki no.4:99-103 '61. (MIRA 14:11)

1. Rekomendovana kafedroy nizshikh rasteniy Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(FIRE BLIGHT)

PETUKHOV, Aleksey Ivanovich; PRAVITSKIY, Nikolay Kliment'yevich [deceased]; RIPP, Mark Grigor'yevich; KLEYEROV, M.F., kand. tekhn. nauk, dots., retsenzent; KHADZHIKOV, R.N., kand. tekhn.nauk, dots., retsenzent; D'YAKOVA, G.B., ved. red.

[Mining engineering] Gornaia mekhanika. Moskva, Nedra, 1965. 400 p. (MIRA 18:12)

GULEMIN, E.M.; D'YAKOVA, G.N.; SHUSTER, R.L.; SAVIN, V.I.

Wall panels of keramzit foam concrete. Stroi. mat. 10 no.2:25-26 F '64. (MIRA 17:6)

D'YAKOVA, G.P.

KRIVOBOK, M.N., kand.biologicheskikh nauk; D'YAKOVA, G.P.

Utilization of food supply by young carp and bream on fish spawning and rearing farms. Trudy VNIRO 32:129-145 '56. (MIRA 10:10)

(Carp) (Bream) (Don Valley--Fishes--Food)

RASKIN, Iosif Aleksandrovich; D'YAKOVA, G.V., ved. red.

[New fans for mine ventilation] Novye ventiliatory dlia shakht i rudnikov. Moskva, Nedra, 1965. 112 p. (MIRA 18:7)

L 22779-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t) IJP(c)

ACC NR: AP6010306 (N) SOURCE CODE: UR/0136/66/000/003/...

41
36
B

AUTHOR: Bogachev, I. N.; D'yakova, M. A.

ORG: none

TITLE: Cavitation resistance of titanium-base alloys

SOURCE: Tsvetnyye metally, no. 3, 1966, 80-82

TOPIC TAGS: titanium alloy, alpha alloy, alpha beta alloy, beta alloy, alloy cavitation, cavitation resistance

ABSTRACT: A series of α-, α+β-, and β-titanium-base alloys have been tested for cavitation resistance. Phase composition was found to be a primary factor determining the behavior of alloys under conditions of cavitation. The lowest cavitation resistance was shown by straight α-alloys in which the weight loss in a 6-hr test amounted to 300 mg. The α-alloys strengthened by precipitated intermetallic compounds of the Ti_2Me type, such as alloys containing 28% Ni, 25% Co, 2% Al and 8% Co, or 3% Al and 9% Ni, were somewhat more resistant; their weight loss in a 20-hr test was 300 mg. Such alloys, however, have a poor or even very poor forgeability. In α+β alloys, resistance to cavitation depends on the amount of β-phase and on the degree of dispersion of α-particles. VT15 alloy heat treated to a structure containing 40% β and 60% α had

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a weight loss of 240 mg in a 25-hr test. With increasing content of the β-phase, the cavitation resistance increases. However, under certain conditions β-phase decomposes under the formation of the brittle ω-phase. Such a structure has a high resistance to cavitation but is susceptible to brittle failure. The formation of the ω-phase can be prevented by correct heat treatment, which for VT3-1, VT14, VT16, and Ti5Al8Mo alloys consists of annealing at 840—870C followed by quenching and tempering at 480—490C. Lower tempering temperatures do not eliminate the possibility of ω-phase formation, while higher temperatures cause coagulation of the α-phase particles and softening of the solid solution. Orig. art. has: 3 figures. [DV]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 4229

Card 2/2 BK

D'yakova, I. F.

73-3-3/24

AUTHOR: Lunenok-Burmakina, V. A. and D'yakova, I. F.

TITLE: Isotopic Exchange of Sulphur in Polythionates. (Izotopnyy Obmen Sery V Politionatakh)

PERIODICAL: Ukrainskiy Khimicheskiy Zhurnal, 1957, vol,23, No.3, pp. 303-305 (USSR).

ABSTRACT: The isotope exchange of sulphur between tri- and tetrathionates, tetra- and pentathionates and tri- and di-thionates was investigated. A 40% exchange occurred between tri- and tetra-thionates at 100°C. Complete exchange at room temperature takes place in the case of tetra- and penta-thionates. However, no exchange of the sulphite atoms occurred in the case of tri- and di-thionates after 2 hours at 60°C. The exchange of sulphide and sulphite ions of sulphur in tri- and tetrathionates takes place with the same velocity (at the same rate) by the exchange of whole thio-sulphate groups of these polythionates. Table 1 gives the results of tests on active tri-thionate and inactive tetra-thionate, table 2 the exchange of inactive trithionate and tetrathionate in which the sulphide sulphur was tagged. There are 2 tables and 11 references, 6 of which are Slavic.

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